Appendix A.

Photographs of the four designated Critical Habitat Units (CHU) of the Agate Desert, Jackson County, Oregon. The CHU's of the Agate Desert are based on are descriptions from the Draft Recovery Plan (USFWS 2006). The photos are representative of sites within each CHU, but no site could be described as typical of a unit. Only CHU's 1-3 were surveyed for this study. All photos were taken and provided from the files of Stephen Wille.

CHU 1, Northern Agate Desert Unit

Photo 1. In November, with autumn rains, some of the vascular vegetation is beginning to green-up. The pool habitat can be roughly defined by the cobble, with an irregular transitional habitat zone surrounded the edges. Buck brush (*Ceaonothus cuneatus*) grows in the Agate series soils on the mound tops.

Photo 2. In June the rains have stopped and in some areas it becomes difficult to clearly distinguish an irregular shaped pool from a swale. The mounds continue to hold some moisture, most of the vascular plants are senescing, and the bryophytes are producing spores.

Photo 3. Cobbles can create distinctive patterns is some pools, but not all pools are distinguished by their presence. Few bryophytes were found that could survive the harsh pool conditions associated with cobble; whereas the transitional areas surrounding the pools contain a diverse bryoflora.

Photo 4. In April many open fields are being actively grazed, note the foreground disturbed by hoof prints. A variety of *Plagiobothrus* spp. (popcorn flowers) blanket the pool bottoms, while *Lasthenia californica* (California goldfields) form a distinct bathtub ring in the transitional area. Growing on top of the mounds is likely rusty popcorn flower (*Plagiobothrus nothofulvus*).

CHU 2, White City East Unit

Photo 5. An area in CHU 2 accidentally burned in July 2008. By August an effort was underway to recover site topography and hydrology, with a mix of native vascular plants applied to the surface. Scattered cobble is visible in the transitional (swale) area. Tire tracks from fire equipment remained apparent throughout the restoration effort.

Photo 6. Driving over the mounded prairie after the burn compacted the soils and pulverized the remnant surface organic layer. It would be interesting to continue to monitor the site to see how well the bryophytes could re-establish after the fire.

CHU 3, White City West Unit

Photo 7. A representative pool within CHU 3 in September, Lower Table Rock is in the far background. After a rainstorm this pool will fill the entire lower portion of the photo; a few days later water may only inundate the cobble accumulation in the lowest portion of the pool.

Photo 8. Not all pools contain cobble, they can also be flat and rather featureless. Pool habitat is represented in the dark streak in photo center. Looking to the north, Upper Table Rock is in the background. The grassy island and pool fringe were classified as transitional habitat.

Photo 9. This is the same pool as Photo 8 in autumn, looking to the east. The grassy island is marked by the upper end of a piezometer pipe, used to monitor seasonal water depth.

Photo 10. Another large CHU 3 pool in September. The fringe grasses designate the approximate boundaries of the transitional habitat area.

Photo 11. A vernal pool site in CHU 3 with a staff gage placed to measure water depths during the wet season. California meadow voles (*Microtus californicus*) created extensive moss lined runs under the Medusahead thatch prevalent at many sites.

Photo 11. CHU 3 also had pools surrounded by *Quercus garryana* (white oak) and *Ceanothus cuneatus* (buck brush) that no longer held water in May. No active livestock grazing is currently allowed on this property.

Photo 12. A pool in CHU 3 were the water has dropped below the full pool level, making the periodically inundated transitional area favored by many bryophytes more obvious.

CHU 4, Table Rocks Unit

Photo 13. In some places on Upper Table Rock only non-vascular plants were able to survive on the andesite hardpan layer. Note the smooth, subangular rocks on the surface, and look again at the well-rounded cobble on the Agate Desert floor (see Photo 3). Upper and Lower Table Rocks were not surveyed as part of this study.